

## CLAIMS

1. A connection between a first and a second roof truss member, said connection characterised by:  
said first member including two parallel and spaced apart longitudinal surfaces  
5 wherein at least a portion of said surfaces is laterally disposed from their respective longitudinal surfaces; and  
said second member including two parallel and spaced apart longitudinal surfaces wherein at least a portion of said surfaces is correspondingly shaped with said laterally disposed portions of the first member, whereby engagement of said first and  
10 second portions allows said second member to rotate relative to said first member whilst preventing said second member from radial movement relative to the first member.
2. A connection according to claim 1 wherein said first and second portions include apertures which coaxially align when said portions are engaged.
- 15 3. A connection according to claim 1 or claim 2 wherein said second member is rotatable relative to said first member about a shaft adapted to extend through said coaxial apertures.
4. A connection according to claim 3 wherein said shaft is in the form of a bolt connection capable of locking said first and second members at a desired angle.
- 20 5. A connection according to any one of the preceding claims wherein said connection includes a means to maintain the spaced apart relationship between parallel surfaces of the first member despite tightening of the bolt which urges said surfaces together.
6. A connection according to any one of the preceding claims wherein said first member includes a secondary locking means in the form of two gripping edges associated with  
25 said laterally spaced portions of the first member such that when the bolt connection is tightened, the gripping edges grip said parallel and spaced apart longitudinal surfaces of said second member.
7. A connection according to any one of the preceding claims wherein said first member is a chord member of the roof truss.
- 30 8. A connection according to any one of the preceding claims wherein said second member is a stiffening member of the roof truss.

9. A metal roof truss including:  
at least one longitudinal stiffening member including two parallel and spaced apart side walls; and  
at least one longitudinal chord member also including two parallel and spaced apart side walls whereby at least one section along the length or at the ends of the chord member is adapted to house a first end of said stiffening member or a first end of a further chord member, such that the free end of the stiffening or further chord member is free to rotate.
10. A metal roof truss according to claim 9 wherein said metal roof truss includes a lower chord member adapted to lie substantially flat and parallel to the ground and two upper chord members connected at an apex above said lower chord member and to opposed ends of the lower chord member in a triangular arrangement.
11. A metal roof truss according to claim 9 or claim 10 wherein said metal roof truss includes a web of stiffening members that support the upper and lower chord members.
12. A metal roof truss according to claim 11 wherein said chord and stiffening members have a substantially C-section profile and further include an indented base and upper edges defining an open channel.
13. A metal roof truss according to any one of claims 9-12 wherein said parallel and spaced apart side walls of the stiffening and chord members extend longitudinally beyond the length of the indented base and upper edges to thereby form parallel and spaced apart end flanges.
14. A metal roof truss according to any one of claims 9-13 wherein said flanges extend beyond the base and upper edges in a substantially semicircular arrangement whereby the radial centres of each flange also define the radial centres of internally pressed circular sections located at each flange.
15. A metal roof truss according to any one of claims 9-14 wherein each of the parallel and spaced apart side walls of the chord member includes internally pressed circular sections at mounting sections therealong, said internally pressed circular sections being correspondingly shaped with the internally pressed circular sections of the stiffening member parallel flanges.

- 5 16. A metal roof truss according to any one of claims 9-15 wherein when said parallel flanges are received within said parallel side walls, the internally pressed circular sections of each flange engage with corresponding internally pressed circular sections of each parallel side wall, thereby preventing the stiffening member or further chord member from movement along the shear plane between their respective surfaces.
- 10 17. A metal roof truss according to any one of claims 9-16 wherein said section of said chord member adapted to house a first end of the stiffening member or a first end of a further chord member includes splayed upper edges located above and adjacent the internally pressed sections of the chord member, the splayed edges extending substantially upwardly and outwardly and then inwardly toward the parallel and spaced apart side walls of the stiffening member or further chord member.
- 15 18. A metal roof truss according to any one of claims 9-17 wherein each internally pressed circular section of the chord and stiffening members include an aperture at their centre such that when engaged, the internally pressed sections of each member become coaxially aligned.
19. A metal roof truss according to any one of claims 9-18 wherein said stiffening or further chord members are lockable to said chord member using a bolt adapted to extend through co-axially aligned apertures of said internally pressed sections.
- 20 20. A metal roof truss according to any one of claims 9-19 wherein when said bolt is tightened, the semicircular flanges and side walls are prevented from internally deflecting by a cylindrical ferrule locked there between.
21. A metal roof truss according to claim 19 or claim 20 wherein said cylindrical ferrule is of a diameter slightly greater than the diameter of the internally pressed sections of each semicircular flange.
- 25 22. A metal roof truss according to any one of claims 9-21 wherein just prior to said bolt being tightened, the free end of the stiffening member or further chord member is able to rotate about said bolt.
- 30 23. A metal roof truss according to any one of claims 9-22 wherein when said bolt is tightened, said internally extending splayed edge bites into the side walls of the stiffening member or further chord member thereby acting as a secondary means for preventing shear deflection of the members.

24. A metal roof truss according to any one of claims 9-23 wherein an apex plate joins stiffening members and chord members at the roof truss's upper apex.